CLAIMS

What is claimed is:

1. In a communications system having a first modem transmitting via a communications channel, a method for adding a second modem for communication via said communications channel, the method comprising:

configuring said second modem for receiving communications via said communications channel;

learning crosstalk caused by transmissions from said first modem via said communications channel to said second modem while said second modem is in a transmitting state insufficient to cause crosstalk interference to said first modem in accordance with a predefined measure;

deriving from said learned crosstalk an estimation of crosstalk that would be caused by said second modem to said first modem when said second modem is in a transmitting state;

configuring said first modem to cancel crosstalk according to said crosstalk estimation;

causing said second modem to enter a transmitting state sufficient to cause crosstalk interference to said first modem in accordance with a predefined measure; and

causing said first modem to at least partially cancel crosstalk caused by said second modem in accordance with said crosstalk estimation.

2. A method according to claim 1 wherein said learning step comprises learning by applying crosstalk cancellation to transmissions received by said second modem at a receiver of said second modem.

3. A method according to claim 1 wherein said learning step comprises expressing said learned crosstalk as a transfer function.

4. A method according to claim 1 wherein said learning step comprises learning while said second modem is in a non-transmitting state

5. A method according to claim 1 wherein said deriving step comprises applying an adjustment to said crosstalk estimation to compensate for a difference in a characteristic of said transmissions.

6. A method according to claim 1 wherein said deriving step comprises deriving said estimation from a reciprocal value of said learned crosstalk.

7. In a communications system having a modem pool for communicating via a communications channel, the modem pool having a plurality of modems, a method for modem pool expansion comprising:

adding a new modem into said modem pool, wherein said new modem is operative to communicate via said communications channel;

learning crosstalk caused by transmissions from any of said plurality of modems via said communications channel to said added modem while said added modem is in a transmitting state insufficient to cause crosstalk interference to any of said plurality of modems in accordance with a predefined measure;

deriving from said learned crosstalk an estimation of crosstalk that would be caused by said added modem to any of said plurality of modems when said added modem is in a transmitting state;

configuring any of said plurality of modems to cancel crosstalk according to said crosstalk estimation;

causing said added modem to enter a transmitting state sufficient to cause crosstalk interference to any of said plurality of modems in accordance with a predefined measure; and

causing any of said plurality of modems to at least partially cancel crosstalk caused by said added modem in accordance with said crosstalk estimation..

8. A method according to claim 7 wherein said learning step comprises learning by applying crosstalk cancellation to transmissions received by said new modem at a receiver of said new modem.

9. A method according to claim 7 wherein said learning step comprises expressing said learned crosstalk as a transfer function.

10. A method according to claim 7 wherein said learning step comprises learning while said added modem is in a non-transmitting state

11. A method according to claim 7 wherein said deriving step comprises applying an adjustment to said crosstalk estimation to compensate for a difference in a characteristic of said transmissions.

12. A method according to claim 7 wherein said deriving step comprises deriving said estimation from a reciprocal value of said learned crosstalk.

13. A communications system having a first modem transmitting via a communications channel, and a second modem for communication via said communications channel, the system comprising:

means for configuring said second modem for receiving communications via said communications channel;

means for learning crosstalk caused by transmissions from said first modem via said communications channel to said second modem while said second modem is in a transmitting state insufficient to cause crosstalk interference to said first modem in accordance with a predefined measure;

means for deriving from said learned crosstalk an estimation of crosstalk that would be caused by said second modem to said first modem when said second modem is in a transmitting state;

means for configuring said first modem to cancel crosstalk according to said crosstalk estimation;

means for causing said second modem to enter a transmitting state sufficient to cause crosstalk interference to said first modem in accordance with a predefined measure; and

means for causing said first modem to at least partially cancel crosstalk caused by said second modem in accordance with said crosstalk estimation.

14. A system according to claim 13 wherein said means for learning is operative to learn by applying crosstalk cancellation to transmissions received by said second modem at a receiver of said second modem.

15. A system according to claim 13 wherein said means for learning is operative to express said learned crosstalk as a transfer function.

16. A system according to claim 13 wherein said means for learning is operative to learn while said second modem is in a non-transmitting state

17. A system according to claim 13 wherein said means for deriving is operative to apply an adjustment to said crosstalk estimation to compensate for a difference in a characteristic of said transmissions.

18. A system according to claim 13 wherein said means for deriving is operative to derive said estimation from a reciprocal value of said learned crosstalk.

19. A communications system having a modem pool for communicating via a communications channel, the modem pool having a plurality of modems, the system comprising:

means for adding a new modem into said modem pool, wherein said new modem is operative to communicate via said communications channel;

means for learning crosstalk caused by transmissions from any of said plurality of modems via said communications channel to said added modem while said added modem is in a transmitting state insufficient to cause crosstalk interference to any of said plurality of modems in accordance with a predefined measure;

means for deriving from said learned crosstalk an estimation of crosstalk that would be caused by said added modem to any of said plurality of modems when said added modem is in a transmitting state;

means for configuring any of said plurality of modems to cancel crosstalk according to said crosstalk estimation;

means for causing said added modem to enter a transmitting state sufficient to cause crosstalk interference to any of said plurality of modems in accordance with a predefined measure; and

means for causing any of said plurality of modems to at least partially cancel crosstalk caused by said added modem in accordance with said crosstalk estimation..

20. A system according to claim 19 wherein said means for learning is operative to learn by applying crosstalk cancellation to transmissions received by said new modem at a receiver of said new modem.

21. A system according to claim 19 wherein said means for learning is operative to express said learned crosstalk as a transfer function.

22. A system according to claim 19 wherein said means for learning is operative to learn while said added modem is in a non-transmitting state

23. A system according to claim 19 wherein said means for deriving is operative to apply an adjustment to said crosstalk estimation to compensate for a difference in a characteristic of said transmissions.

24. A system according to claim 19 wherein said means for deriving is operative to derive said estimation from a reciprocal value of said learned crosstalk.